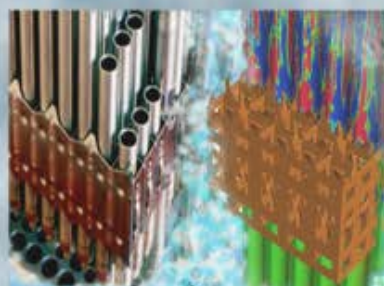
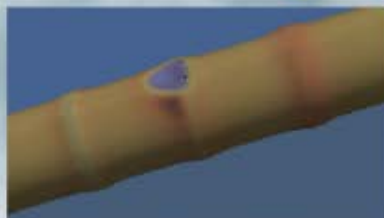
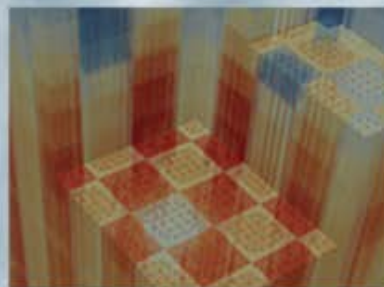


CASL Program Highlights July 2015

Jess Gehin
Oak Ridge National Laboratory

July 31, 2015

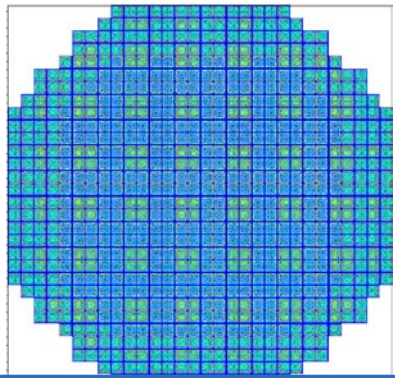
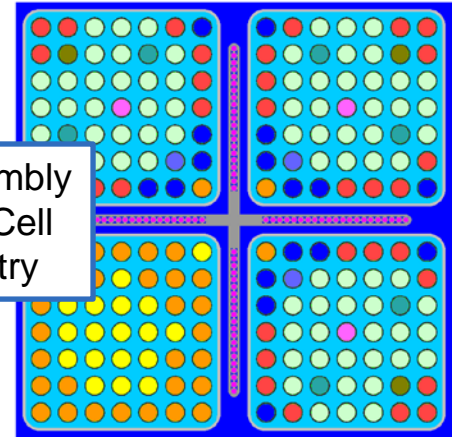


Demonstrate on new VERA Boiling Water Reactor (BWR) Neutronics Capability

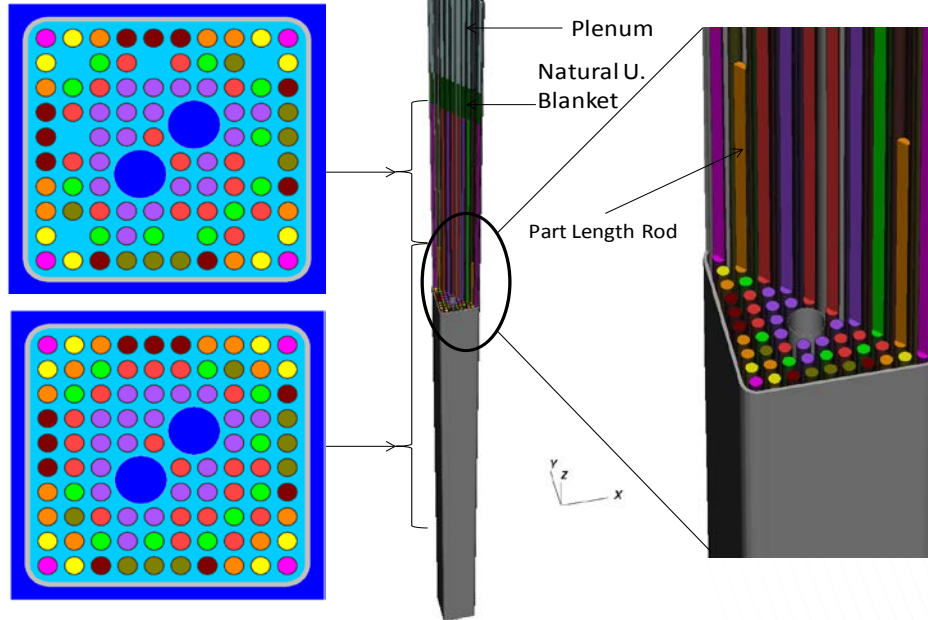
- Objective of work is to implement and demonstrate modeling capability for BWR Control Cell
- Stretch goals of capability for 2-D, Full Core BWR core and 3-D single assembly modeling demonstrated

Science Highlight

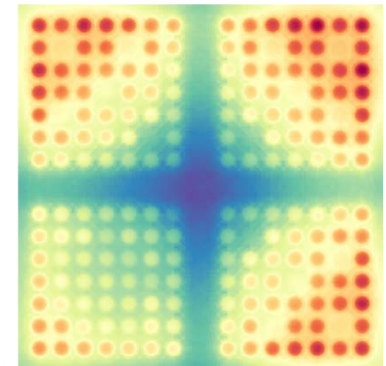
2x2 Assembly
Control Cell
Geometry



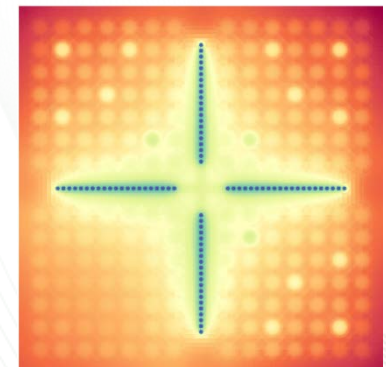
2-D Core Demonstration



3-D Assembly Model Demonstration



Fast Neutron Flux



Thermal Neutron Flux

CASL Symposium Represents Phase 2 Kick Off

CASL

CASL Symposium
Ashville, NC
July 7-9, 2015

Celebrating the Past
Visualizing the Future

- **Launch Phase 2 by reviewing the past and looking towards the future**
 - Day 1 – What a Nuclear Energy Modeling and Simulation Hub Delivers
 - Day 2 – Phase 1 Accomplishments and Plans for Phase 2
 - Day 3 – Future of CASL and High Performance Computing
- **A total of 120 participants representing:**
 - All CASL Organizations
 - Industry: Westinghouse, NuScale, mPower, Southern Company, IBM, D-Wave
 - DOE NE, SC



John Kotek, Acting Assistant Secretary for the Office of Nuclear Energy Addressing the CASL symposium

Congratulations to the CASL 2015 Award Winners!

CASL

CASL Knight Award

For Outstanding Technical Achievement



Ben Collins
ORNL

CASL Jester Award

For Enthusiasm and Contagious Positive Attitude in Supporting CASL Objectives



Rose Montgomery
TVA

CASL Special Award

CASL Founding Director Leadership Award



Doug Kothe
ORNL

Presented at the CASL Symposium, July 8, 2015

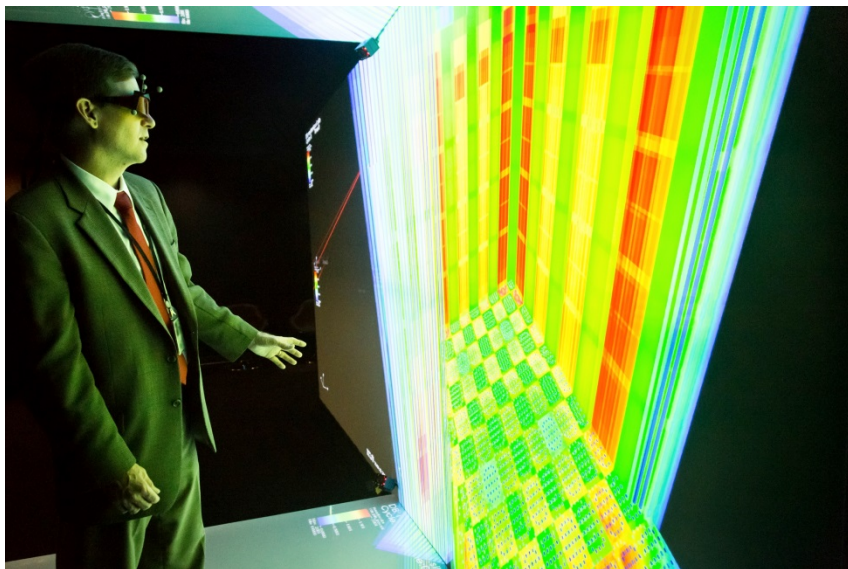
CASL Board of Directors Meets July 9, 2015 in Asheville, NC

CASL

- CASL's BOD meeting held July 9, 2015 in Asheville, NC directly after CASL Symposium
- Chaired by new Board Chair Dr. James Duderstadt, President Emeritus, University of Michigan
- Key topics discussed:
 - CASL Status
 - Path forward on Thermal Hydraulics Methods
 - IP Management
 - Technology Deployment and Post CASL Planning
- New board member in attendance:
 - Susan Pickering (Sandia)



John Kotek Tours CASL Facilities and Discusses CASL's Progress and Plans, July 17, 2015



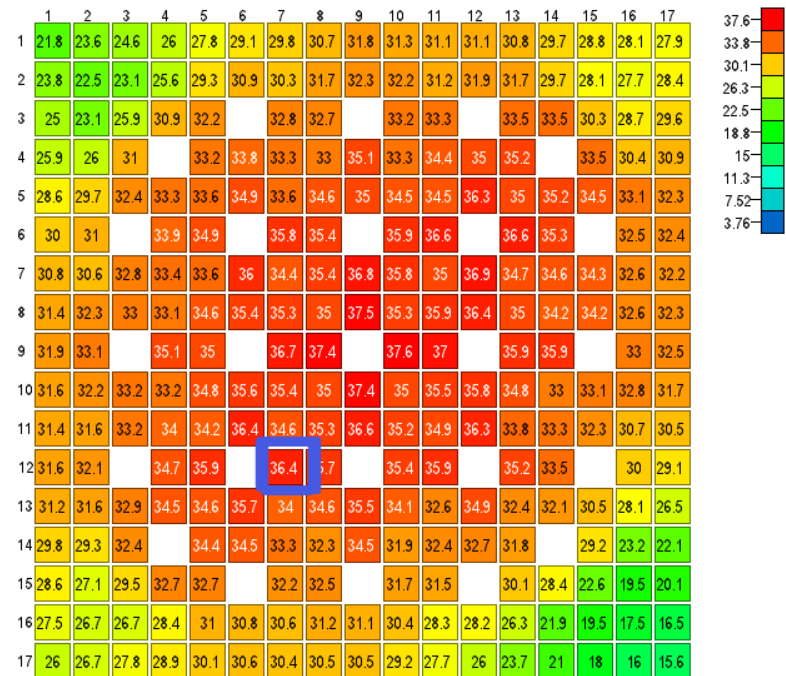
Tour of CASL's Virtual Office, Community, and Computing Laboratory including a demonstration of the visualization of CASL Westinghouse AP1000 Reactor Core Simulations

Discussion of CASL's Progress and Plans In the Virtual Office, Community, and Computing Laboratory I-CREATE Facility



VERA-CS CRUD Capabilities Presented to EPRI PWR Technical Advisory Committee Chicago, IL July 23-24, 2015

- The Electric Power Research Institute PWR Technical Advisory Committee (P-TAC) brings together experts on fuel reliability from the nuclear industry
- Attendees include vendors, utilities, and research organizations
- CASL was invited to give an update on new CRUD-modeling capabilities in VERA-CS
- Discussed integration of MAMBA into CTF and CTF/MPACT
- Presented results of Watts Bar and Seabrook Cycle 5 CRUD growth



VERA-CS prediction of
CRUD thickness in Seabrook
Cycle 5 assembly that
experienced CRUD induced
localized corrosion (CILC)

CASL Meets with NRC Staff to Discuss Progress

July 30, 2015 NRC Headquarters

CASL



- CASL/NRC meetings to keep NRC informed of progress and to seek feed back on research
- Attended by 18 NRC Personnel from
 - Office of Nuclear Regulatory Research
 - Offices of Nuclear Reactor Regulation and New Reactors
- CASL presentation topics included status of capability development, discussion of CASL CFD and DNB work, and a Validation and Modeling Applications update
- Areas of NRC interest included:
 - Modeling of progression LOCA fuel ballooning
 - Discussion of NRC challenges in reviewing license submissions based on advanced computational capabilities
 - Interest in a CASL test stand and TRACE (NRC's plant systems code) interoperability with VERA
 - NRC participation in future VERA training

CASL July 2015 Activities

VOCC Tours

- John Welch, Chairman of Battelle Board of Directors
- Safeguards & Security Audit Team
- John Kotek, Principal Deputy Assistant Secretary for the Office of Nuclear Energy, DOE
- STEM Students

Meetings

- CASL Symposium, July 7-9
- CASL Board Meeting, July 9
- Participation in MEV School, July 21-24
- CASL Presentation to NEI, July 30
- CASL/NRC Meeting, July 30